

**VOLATILE ORGANIC COMPOUNDS**  
USEPA Region II –Data Validation

**Project Name:** Cornell-Dubilier Electronics Superfund Site: OU4 Bound Brook

**Location:** South Plainfield, New Jersey

**Project Number:** 3715-001

**SDG #:** 1324468, LBG44

**Client:** The Louis Berger Group, Inc.

**Date:** 10/29/2012

**Laboratory:** Eurofins/Lancaster Laboratories, Lancaster, PA

**Reviewer:** Samir A. Naguib

**Summary:**

1. Data validation was performed on the data for eight (8) Porewater samples, one (1) equipment blank and one (1) trip blank analyzed for Volatiles by SW-846 Methods 5030B/8260B.
2. The samples were collected on 07/24/2012. The samples were submitted to Eurofins/Lancaster Laboratories, Lancaster, PA on 07/25/2012 for analysis.
3. The National Functional Guidelines for Organic Data Review, OSWER 9240.1-05A-P, PB99-963596, EPA 540/R99/008, October 1999; Lancaster Laboratories, Standard Operating Procedure, Revision 18, May 2012 and Cornell-Dubilier Electronics Superfund Site: OU4 Bound Brook Quality Assurance Project Plan (QAPP), Modification No. 6, June 2012 were used in evaluating the Volatiles data in this summary report.
4. In general, the data are valid as reported and may be used for decision making purposes. Selected data points were qualified due to nonconformance of certain Quality Control criteria (see discussion below).

**Samples:**

The samples included in this review are listed below:

Client Sample ID	Laboratory Sample ID	Collection Date	Analysis	Matrix	Sample Status
CDEOU4-20120724-PW01UP-0030	6732869	07/24/12	VOA	Water	
CDEOU4-20120724-PW02-0030	6732870	07/24/12	VOA	Water	
CDEOU4-20120724-PW03-0030	6732871	07/24/12	VOA	Water	
CDEOU4-20120724-PW09-0030	6732872	07/24/12	VOA	Water	
CDEOU4-20120724-PW10-0030	6732873	07/24/12	VOA	Water	
CDEOU4-20120724-PW18-0030	6732874	07/24/12	VOA	Water	
CDEOU4-20120724-PW19-0030	6732875	07/24/12	VOA	Water	
CDEOU4-20120724-PW20-0030	6732876	07/24/12	VOA	Water	
CDEOU4-20120724-Reterieval1-EQBLNK	6732877	07/24/12	VOA	Water	Equipment Blank
CDEOU4-20120724-Reterieval1-TRIPBLNK	6732878	07/24/12	VOA	Water	Trip Blank

**Sample Conditions/Problems:**

1. The Traffic Reports/Chain-of-Custody Records, Sampling Report and/or Laboratory Case Narrative did not indicate any problems with sample receipt, condition of samples, analytical problems or special circumstances affecting the quality of the data. No qualifications were required.

**Holding Times:**

1. All water samples were analyzed within 14days from sample collection. No qualifications were required.
2. All water samples were properly preserved (pH<2.0). No qualifications were required.

**GC/MS Tuning:**

1. All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

**Initial Calibration:**

1. Initial calibration curve analyzed on 07/10/2012 (HP09355) exhibited acceptable %RSD and average RRF values for all compounds. No qualifications were required.

**Initial Calibration Verification (ICV):**

1. Initial calibration verification analyzed on 07/10/2012 (HP09355) exhibited acceptable %Ds ( $\leq 20.0\%$ ) with the following exception(s):

Compound	RRF	%D
Dichlorodifluoromethane	A	-28
Bromomethane	A	-23
Chloroethane	A	-29

A= Acceptable

Client Sample ID	Laboratory Sample ID	Compound	Action
CDEOU4-20120724-PW01UP-0030	6732869	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120724-PW02-0030	6732870	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120724-PW03-0030	6732871	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120724-PW09-0030	6732872	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120724-PW10-0030	6732873	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120724-PW18-0030	6732874	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120724-PW19-0030	6732875	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120724-PW20-0030	6732876	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120724-Retrieval1-EQBLNK	6732877	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120724-Retrieval1-TRIPBLNK	6732878	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE

### **Continuing Calibration Verification (CCV):**

1. CCV analyzed on 07/26/2012 @ 08:34AM (HP09355) exhibited acceptable %Ds ( $\leq 20.0\%$ ) for CCC compounds and RRF values for SPCC compounds. %Ds for all non-CCC compounds were  $\leq 25.0\%$ . No qualifications were required.
2. CCV analyzed on 07/27/2012 @ 09:32 AM (HP09355) exhibited acceptable %Ds ( $\leq 20.0\%$ ) for CCC compounds and RRF values for SPCC compounds. %Ds for all non-CCC compounds were  $\leq 25.0\%$ . No qualifications were required.

### **Surrogates:**

1. All surrogates %RECs values for all water samples and associated QC were within the laboratory control limits. No qualifications were required.

### **Internal Standard (IS) Area Performance:**

1. All samples exhibited acceptable area count for all four internal standards. No qualifications were required.

### **Method Blank (MB), Storage Blank (SB), Trip Blank (TB), Field Blank (FB), Rinsate Blank (RB) and Equipment Blank (EB):**

1. Method Blank (VBLKY95) analyzed on 07/26/2012 was free of contamination. No qualifications were required.
2. Method Blank (VBLKY96) analyzed on 07/27/2012 was free of contamination. No qualifications were required.
3. Equipment Blank (CDEOU4-20120724-Retrieval1-EQBLNK) (6732877) associated with the water samples collected on 07/24/2012 and analyzed on 07/26/2012 was free of contamination. No qualifications were required.
4. Trip Blank (CDEOU4-20120724-Retrieval1-TRIPBLNK) (6732878) associated with the water samples collected on 07/24/2012 and analyzed on 07/26/2012 was free of contamination. No qualifications were required.

**Laboratory Control Sample (LCS)/ Laboratory Control Sample Duplicate (LCSD):**

1. Laboratory Control Sample (LCSY95) was analyzed on 07/26/2012. All %RECs were within the laboratory control limits. No qualifications were required.
2. Laboratory Control Sample (LCSY96) was analyzed on 07/27/2012. All %RECs were within the laboratory control limits. No qualifications were required.

**Field Duplicate:**

1. A field duplicate pair was not submitted with this SDG.

**Matrix Spike (MS)/ Matrix Spike Duplicate (MSD):**

1. Matrix Spike (MS) and Matrix Spike Duplicate (MSD) source sample were associated with a different SDG.

**Target Compound Identification:**

1. All Relative Retention Times (RRTs) of the reported compounds were within  $\pm 0.06$  RRT units of the standard (opening CCV).
2. Sample compound spectra were compared against the laboratory standard spectra.
3. No QC deviations were observed.

**Compound Quantitation and Reported Contract Required Quantitation Limits (CRQLs):**

1. All results were within the linear calibration range. No qualifications were required.
2. Manual Calculation:

$$C_x = \frac{(A_x)(IS)(DF)}{(A_{is})(RRF)(V)}$$

C<sub>x</sub> = concentration of analyte as µg/L

A<sub>x</sub> = Area of the characteristic ion for the compound to be measured, counts.

A<sub>is</sub> = Area of the characteristic ion for the specific internal standard, counts.

IS = Concentration of the internal standard spiking mixture, ng

RRF= Mean relative response factor from the initial calibration.

DF = Dilution factor calculated. If no dilution is performed, DF= 1

V= Volume for liquids in ml, weight for soils/solids in grams.

CDEOU4-20120724-PW09-0030 (6732872)

Cis-1,2-Dichloroethene

Sample Volume= 5ml

Volume purged=5ml

DF = 10

Concentration (µg/L)=  $\frac{706740 \times 50 \times 10 \times 5}{905816 \times 0.3032 \times 5} = 1286.65 \mu\text{g/L}$

Compound	Laboratory (µg/L)	Validation (µg/L)	%D
Cis-1,2-Dichloroethene	1300	1300	0.0

**Comments:**

1. Validation qualifiers (if required) were entered into the EDD for 2012-10-29-Powerwater MEDD-VOCs-Validated.

**VOLATILE ORGANIC COMPOUNDS**  
USEPA Region II –Data Validation

**Project Name:** Cornell-Dubilier Electronics Superfund Site: OU4 Bound Brook

**Location:** South Plainfield, New Jersey

**Project Number:** 3715-001

**SDG #:** 1324659, LBG45

**Client:** The Louis Berger Group, Inc.

**Date:** 10/29/2012

**Laboratory:** Eurofins/Lancaster Laboratories, Lancaster, PA

**Reviewer:** Samir A. Naguib

**Summary:**

1. Data validation was performed on the data for ten (10) Porewater samples and one (1) trip blank analyzed for Volatiles by SW-846 Methods 5030B/8260B.
2. The samples were collected on 07/25/2012. The samples were submitted to Eurofins/Lancaster Laboratories, Lancaster, PA on 07/26/2012 for analysis.
3. The National Functional Guidelines for Organic Data Review, OSWER 9240.1-05A-P, PB99-963596, EPA 540/R99/008, October 1999; Lancaster Laboratories, Standard Operating Procedure, Revision 18, May 2012 and Cornell-Dubilier Electronics Superfund Site: OU4 Bound Brook Quality Assurance Project Plan (QAPP), Modification No. 6, June 2012 were used in evaluating the Volatiles data in this summary report.
4. In general, the data are valid as reported and may be used for decision making purposes. Selected data points were qualified due to nonconformance of certain Quality Control criteria (see discussion below).

**Samples:**

The samples included in this review are listed below:

Client Sample ID	Laboratory Sample ID	Collection Date	Analysis	Matrix	Sample Status
CDEOU4-20120725-PW04-0030	6733720	07/25/12	VOA	Water	
CDEOU4-20120725-PW05-0030	6733721	07/25/12	VOA	Water	
CDEOU4-20120725-PW06-0030	6733722	07/25/12	VOA	Water	
CDEOU4-20120725-PW07-0030	6733723	07/25/12	VOA	Water	
CDEOU4-20120725-PW08-0030	6733724	07/25/12	VOA	Water	
CDEOU4-20120725-PW13-0030	6733725	07/25/12	VOA	Water	
CDEOU4-20120725-PW14-0030	6733726	07/25/12	VOA	Water	
CDEOU4-20120725-PW16-0030	6733729	07/25/12	VOA	Water	
CDEOU4-20120725-PW17-0030	6733730	07/25/12	VOA	Water	
CDEOU4-20120725-PW88-0030	6733731	07/25/12	VOA	Water	Field Duplicate of Sample CDEOU4-20120725-PW08-0030
CDEOU4-20120725-Retrieval1-TRIPBLNK	6733732	07/25/12	VOA	Water	Trip Blank

**Sample Conditions/Problems:**

1. The Traffic Reports/Chain-of-Custody Records, Sampling Report and/or Laboratory Case Narrative did not indicate any problems with sample receipt, condition of samples, analytical problems or special circumstances affecting the quality of the data. No qualifications were required.

**Holding Times:**

1. All water samples were analyzed within 14days from sample collection. No qualifications were required.
2. All water samples were properly preserved (pH<2.0). No qualifications were required.



**GC/MS Tuning:**

1. All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

**Initial Calibration:**

1. Initial calibration curve analyzed on 05/17/2012 (SH08363) exhibited acceptable %RSD and average RRF values for all compounds. No qualifications were required.

**Initial Calibration Verification (ICV):**

1. Initial calibration verification analyzed on 05/18/2012 (SH08363) exhibited acceptable %Ds ( $\leq 20.0\%$ ) with the following exception(s):

Compound	RRF	%D
Dichlorodifluoromethane	A	-43

A= Acceptable

Client Sample ID	Laboratory Sample ID	Compound	Action
CDEOU4-20120725-PW04-0030	6733720	Dichlorodifluoromethane	UE
CDEOU4-20120725-PW05-0030	6733721	Dichlorodifluoromethane	UE
CDEOU4-20120725-PW06-0030	6733722	Dichlorodifluoromethane	UE
CDEOU4-20120725-PW07-0030	6733723	Dichlorodifluoromethane	UE
CDEOU4-20120725-PW08-0030	6733724	Dichlorodifluoromethane	UE
CDEOU4-20120725-PW13-0030	6733725	Dichlorodifluoromethane	UE
CDEOU4-20120725-PW14-0030	6733726	Dichlorodifluoromethane	UE
CDEOU4-20120725-PW16-0030	6733729	Dichlorodifluoromethane	UE
CDEOU4-20120725-PW17-0030	6733730	Dichlorodifluoromethane	UE
CDEOU4-20120725-PW88-0030	6733731	Dichlorodifluoromethane	UE
CDEOU4-20120725-Reterieval1-TRIPBLNK	6733732	Dichlorodifluoromethane	UE

**Continuing Calibration Verification (CCV):**

1. CCV analyzed on 07/27/2012 @ 09:07AM (SH08363) exhibited acceptable %Ds ( $\leq 20.0\%$ ) for CCC compounds and RRF values for SPCC compounds. %Ds for all non-CCC compounds were  $\leq 25.0\%$  with the following exception(s):

Compound	RRF	%D
Trichlorofluoromethane	A	33
1,1,1-Trichloroethane	A	30
Carbon Tetrachloride	A	28

A= Acceptable

Client Sample ID	Laboratory Sample ID	Compound	Action
CDEOU4-20120725-PW04-0030	6733720	Trichlorofluoromethane, 1,1,1-Trichloroethane Carbon Tetrachloride	UE UE
CDEOU4-20120725-PW05-0030	6733721	Trichlorofluoromethane, 1,1,1-Trichloroethane Carbon Tetrachloride	UE UE
CDEOU4-20120725-PW06-0030	6733722	Trichlorofluoromethane, 1,1,1-Trichloroethane Carbon Tetrachloride	UE UE
CDEOU4-20120725-PW07-0030	6733723	Trichlorofluoromethane, 1,1,1-Trichloroethane Carbon Tetrachloride	UE UE
CDEOU4-20120725-PW08-0030	6733724	Trichlorofluoromethane, 1,1,1-Trichloroethane Carbon Tetrachloride	UE UE
CDEOU4-20120725-PW13-0030	6733725	Trichlorofluoromethane, 1,1,1-Trichloroethane Carbon Tetrachloride	UE UE
CDEOU4-20120725-PW14-0030	6733726	Trichlorofluoromethane, 1,1,1-Trichloroethane Carbon Tetrachloride	UE UE
CDEOU4-20120725-PW16-0030	6733729	Trichlorofluoromethane, 1,1,1-Trichloroethane Carbon Tetrachloride	UE UE
CDEOU4-20120725-PW17-0030	6733730	Trichlorofluoromethane, 1,1,1-Trichloroethane Carbon Tetrachloride	UE UE
CDEOU4-20120725-PW88-0030	6733731	Trichlorofluoromethane, 1,1,1-Trichloroethane Carbon Tetrachloride	UE UE
CDEOU4-20120725-Retrieval1-TRIPBLNK	6733732	Trichlorofluoromethane, 1,1,1-Trichloroethane Carbon Tetrachloride	UE UE

**Surrogates:**

1. All surrogates %RECs values for all water samples and associated QC were within the laboratory control limits. No qualifications were required.

**Internal Standard (IS) Area Performance:**

1. All samples exhibited acceptable area count for all four internal standards. No qualifications were required.

**Method Blank (MB), Storage Blank (SB), Trip Blank (TB), Field Blank (FB), Rinsate Blank (RB) and Equipment Blank (EB):**

1. Method Blank (VBLKT84) analyzed on 07/27/2012 was free of contamination. No qualifications were required.
2. Trip Blank (CDEOU4-20120725-Retrieval1-TRIPBLNK) (6733732) associated with the water samples collected on 07/25/2012 and analyzed on 07/27/2012 was free of contamination. No qualifications were required.

**Laboratory Control Sample (LCS)/ Laboratory Control Sample Duplicate (LCSD):**

1. Laboratory Control Sample (LCST84) was analyzed on 07/27/2012. All %RECs were within the laboratory control limits with the following exception(s):

Compound	%R	Sample Affected	Action
1,1,1-Trichloroethane <sup>(1)</sup>	124	CDEOU4-20120725-PW04-0030, CDEOU4-20120725-PW05-0030 CDEOU4-20120725-PW06-0030, CDEOU4-20120725-PW07-0030 CDEOU4-20120725-PW08-0030, CDEOU4-20120725-PW13-0030 CDEOU4-20120725-PW14-0030, CDEOU4-20120725-PW16-0030 CDEOU4-20120725-PW17-0030, CDEOU4-20120725-PW88-0030 CDEOU4-20120725-Retrieval1-TRIPBLNK	None None None None None None

<sup>(1)</sup>= No qualifications were required due to this compound was recovered above the laboratory control limits and was not detected in any of the associated samples. However, this compound was already qualified from the CCV.

**Field Duplicate:**

1. Sample CDEOU4-20120725-PW88-0030 (6733731) was collected as field duplicate for sample CDEOU4-20120725-PW08-0030 (673724). All RPDs were  $\leq 50\%$ . No qualifications were required.

Field Sample	Analyte	Analytical Method	Result	Units	Field Duplicate	Result	Units	RPD	Qualifier
CDEOU4-20120725-PW08-0030	cis-1,2-Dichloroethylene	SW846 8260B	1700	µg/L	CDEOU4-20120725-PW88-0030	1400	µg/L	19.4	None
CDEOU4-20120725-PW08-0030	Vinyl chloride	SW846 8260B	680	µg/L	CDEOU4-20120725-PW88-0030	510	µg/L	28.6	None

**Matrix Spike (MS)/ Matrix Spike Duplicate (MSD):**

1. Matrix Spike (MS) and Matrix Spike duplicate (MSD) were performed on sample CDEOU4-20120725-PW14-0030 (6733726). All %RECs and RPDs were within the laboratory control limits with the following exception(s):

Compound	%REC/%REC/RPD	Action
1,1,1-Trichloroethane	135/135/A	None
1,2-Dichloroethane	133/133/A	None
Carbon Tetrachloride	136/A/A	None

A= Acceptable

**Target Compound Identification:**

1. All Relative Retention Times (RRTs) of the reported compounds were within  $\pm 0.06$  RRT units of the standard (opening CCV).
2. Sample compound spectra were compared against the laboratory standard spectra.
3. No QC deviations were observed.

**Compound Quantitation and Reported Contract Required Quantitation Limits (CRQLs):**

1. All results were within the linear calibration range. No qualifications were required.
2. Manual Calculation:

$$C_x = \frac{(A_x)(IS)(DF)}{(A_{is})(RRF)(V)}$$

C<sub>x</sub> = concentration of analyte as µg/L

A<sub>x</sub> = Area of the characteristic ion for the compound to be measured, counts.

A<sub>is</sub> = Area of the characteristic ion for the specific internal standard, counts.

IS = Concentration of the internal standard spiking mixture, ng

RRF= Mean relative response factor from the initial calibration.

DF = Dilution factor calculated. If no dilution is performed, DF= 1

V= Volume for liquids in ml, weight for soils/solids in grams.

CDEOU4-20120724-PW09-0030 (6733720)

Vinyl Chloride

Sample Volume= 5ml

Volume purged=5ml

DF = 10

Concentration (µg/L)=  $\frac{281665 \times 50 \times 10 \times 5}{694562 \times 0.5323 \times 5} = 380.92 \mu\text{g/L}$

Compound	Laboratory (µg/L)	Validation (µg/L)	%D
Vinyl Chloride	380	380	0.0

**Comments:**

1. Validation qualifiers (if required) were entered into the EDD for 2012-10-29-Powerwater MEDD-VOCs-Validated.

**VOLATILE ORGANIC COMPOUNDS**  
USEPA Region II –Data Validation

**Project Name:** Cornell-Dubilier Electronics Superfund Site: OU4 Bound Brook

**Location:** South Plainfield, New Jersey

**Project Number:** 3715-001

**SDG #:** 1331674, LBG49

**Client:** The Louis Berger Group, Inc.

**Date:** 10/30/2012

**Laboratory:** Eurofins/Lancaster Laboratories, Lancaster, PA

**Reviewer:** Samir A. Naguib

**Summary:**

1. Data validation was performed on the data for eighteen (18) Porewater samples and one (1) trip blank analyzed for Volatiles by SW-846 Methods 5030B/8260B.
2. The samples were collected on 08/21, 22, 23, and 24/2012. The samples were submitted to Eurofins/Lancaster Laboratories, Lancaster, PA on 08/28/2012 for analysis.
3. The National Functional Guidelines for Organic Data Review, OSWER 9240.1-05A-P, PB99-963596, EPA 540/R99/008, October 1999; Lancaster Laboratories, Standard Operating Procedure, Revision 18, May 2012 and Cornell-Dubilier Electronics Superfund Site: OU4 Bound Brook Quality Assurance Project Plan (QAPP), Modification No. 6, June 2012 were used in evaluating the Volatiles data in this summary report.
4. In general, the data are valid as reported and may be used for decision making purposes. Selected data points were qualified due to nonconformance of certain Quality Control criteria (see discussion below).

### **Samples:**

The samples included in this review are listed below:

<b>Client Sample ID</b>	<b>Laboratory Sample ID</b>	<b>Collection Date</b>	<b>Analysis</b>	<b>Matrix</b>	<b>Sample Status</b>
CDEOU4-20120824-Reterieval2-TRIPBLNK	6769205	08/24/12	VOA	Water	Trip Blank
CDEOU4-20120824-PW20-0030	6769206	08/24/12	VOA	Water	
CDEOU4-20120823-PW17-0030	6769207	08/23/12	VOA	Water	
CDEOU4-20120823-PW16-0030	6769208	08/23/12	VOA	Water	
CDEOU4-20120821-PW08-0030	6769209	08/21/12	VOA	Water	
CDEOU4-20120823-PW06-0030	6769210	08/23/12	VOA	Water	
CDEOU4-20120823-PW05-0030	6769211	08/23/12	VOA	Water	
CDEOU4-20120823-PW04-0030	6769212	08/23/12	VOA	Water	
CDEOU4-20120822-PW02-0030	6769213	08/22/12	VOA	Water	
CDEOU4-20120821-PW01-0030	6769214	08/21/12	VOA	Water	
CDEOU4-20120821-PW88-0030	6769215	08/21/12	VOA	Water	Field Duplicate of Sample CDEOU4-20120821-PW08-0030
CDEOU4-20120822-PW19-0030	6769216	08/22/12	VOA	Water	
CDEOU4-20120822-PW18-0030	6769217	08/22/12	VOA	Water	
CDEOU4-20120821-PW14-0030	6769218	08/21/12	VOA	Water	
CDEOU4-20120821-PW13-0030	6769221	08/21/12	VOA	Water	
CDEOU4-20120823-PW10-0030	6769222	08/23/12	VOA	Water	
CDEOU4-20120823-PW09-0030	6769223	08/23/12	VOA	Water	
CDEOU4-20120823-PW07-0030	6769224	08/23/12	VOA	Water	
CDEOU4-20120822-PW03-0030	6769225	08/22/12	VOA	Water	

### **Sample Conditions/Problems:**

1. The Traffic Reports/Chain-of-Custody Records, Sampling Report and/or Laboratory Case Narrative did not indicate any problems with sample receipt, condition of samples, analytical problems or special circumstances affecting the quality of the data. No qualifications were required.

### **Holding Times:**

1. All water samples were analyzed within 14days from sample collection. No qualifications were required.
2. All water samples were properly preserved (pH<2.0). No qualifications were required.

### **GC/MS Tuning:**

1. All of the BFB tunes in the initial and continuing calibrations met the percent relative abundance criteria. No qualifications were required.

### **Initial Calibration:**

1. Initial calibration curve analyzed on 08/15/2012 (HP07159) exhibited acceptable %RSD and average RRF values for all compounds. No qualifications were required.

### **Initial Calibration Verification (ICV):**

1. Initial calibration verification analyzed on 08/15/2012 (HP07159) exhibited acceptable %Ds ( $\leq 20.0\%$ ) with the following exception(s):

Compound	RRF	%D
Dichlorodifluoromethane	A	-27
Bromomethane	A	-43
Chloroethane	A	-40

A= Acceptable

Client Sample ID	Laboratory Sample ID	Compound	Action
CDEOU4-20120824-Retrieval2-TRIPBLNK	6769205	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120824-PW20-0030	6769206	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120823-PW17-0030	6769207	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120823-PW16-0030	6769208	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120821-PW08-0030	6769209	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120823-PW06-0030	6769210	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120823-PW05-0030	6769211	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120823-PW04-0030	6769212	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120822-PW02-0030	6769213	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120821-PW01-0030	6769214	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120821-PW88-0030	6769215	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120822-PW19-0030	6769216	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120822-PW18-0030	6769217	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120821-PW14-0030	6769218	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120821-PW13-0030	6769221	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120823-PW10-0030	6769222	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120823-PW09-0030	6769223	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120823-PW07-0030	6769224	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE
CDEOU4-20120822-PW03-0030	6769225	Dichlorodifluoromethane, Bromomethane, Chloroethane	UE



### **Continuing Calibration Verification (CCV):**

1. CCV analyzed on 08/31/2012 @ 12:02PM (HP07159) exhibited acceptable %Ds ( $\leq 20.0\%$ ) for CCC compounds and RRF values for SPCC compounds. %Ds for all non-CCC compounds were  $\leq 25.0\%$ . No qualifications were required.
2. CCV analyzed on 09/03/2012 @ 12:55PM (HP07159) exhibited acceptable %Ds ( $\leq 20.0\%$ ) for CCC compounds and RRF values for SPCC compounds. %Ds for all non-CCC compounds were  $\leq 25.0\%$ . No qualifications were required.

### **Surrogates:**

1. All surrogates %RECs values for all water samples and associated QC were within the laboratory control limits. No qualifications were required.

### **Internal Standard (IS) Area Performance:**

1. All samples exhibited acceptable area count for all four internal standards. No qualifications were required.

### **Method Blank (MB), Storage Blank (SB), Trip Blank (TB), Field Blank (FB), Rinsate Blank (RB) and Equipment Blank (EB):**

1. Method Blank (VBLKN01) analyzed on 08/31/2012 was free of contamination. No qualifications were required.
2. Method Blank (VBLKN04) analyzed on 09/03/2012 was free of contamination. No qualifications were required.
3. Trip Blank (CDEOU4-20120824-Retrieval2-TRIPBLNK) (6769205) associated with the water samples collected on 08/21, 22, 23, and 24/2012 and analyzed on 08/31/2012 was free of contamination. No qualifications were required.

**Laboratory Control Sample (LCS)/ Laboratory Control Sample Duplicate (LCSD):**

1. Laboratory Control Sample (LCSN01) was analyzed on 08/31/2012. All %RECs were within the laboratory control limits. No qualifications were required.
2. Laboratory Control Sample (LCSN04) was analyzed on 09/04/2012. All %RECs for vinyl chloride and cis-1,2-Dichloroethene were within the laboratory control limits. No qualifications were required.

**Field Duplicate:**

1. Sample CDEOU4-20120821-PW88-0030 (6769215) was collected as field duplicate for sample CDEOU4-20120821-PW08-0030 (6769209). All RPDs were  $\geq 50\%$ . Both compounds in these two samples were qualified estimated (E).

Field Sample	Analyte	Analytical Method	Result	Units	Field Duplicate	Result	Units	RPD	Qualifier
CDEOU4-20120821-PW08-0030	cis-1,2-Dichloroethylene	SW846 8260B	86	µg/L	CDEOU4-20120821-PW88-0030	750	µg/L	158.9	E
CDEOU4-20120821-PW08-0030	Vinyl chloride	SW846 8260B	720	µg/L	CDEOU4-20120821-PW88-0030	1700	µg/L	81.0	E

**Matrix Spike (MS)/ Matrix Spike Duplicate (MSD):**

1. Matrix Spike (MS) and Matrix Spike duplicate (MSD) were performed on sample CDEOU4-20120821-PW14-0030 (6769218). All %RECs and RPDs were within the laboratory control limits with the following exception(s):

Compound	%REC/%REC/RPD	Action
Trichloroethene	157/A/A	None

A= Acceptable

**Target Compound Identification:**

1. All Relative Retention Times (RRTs) of the reported compounds were within  $\pm 0.06$  RRT units of the standard (opening CCV).
2. Sample compound spectra were compared against the laboratory standard spectra.
3. No QC deviations were observed.

### **Compound Quantitation and Reported Contract Required Quantitation Limits (CROLs):**

1. All results were within the linear calibration range. No qualifications were required.
2. Manual Calculation:

$$C_x = \frac{(A_x)(IS)(DF)}{(A_{is})(RRF)(V)}$$

C<sub>x</sub> = concentration of analyte as µg/L

A<sub>x</sub> = Area of the characteristic ion for the compound to be measured, counts.

A<sub>is</sub> = Area of the characteristic ion for the specific internal standard, counts.

IS = Concentration of the internal standard spiking mixture, ng

RRF= Mean relative response factor from the initial calibration.

DF = Dilution factor calculated. If no dilution is performed, DF= 1

V= Volume for liquids in ml, weight for soils/solids in grams.

#### 2.1 CDEOU4-20120823-PW17-0030 (6769207)

Cis-1,2-Dichloroethene

Sample Volume= 5ml

Volume purged=5ml

DF = 1

$$\text{Concentration } (\mu\text{g/L}) = \frac{33723 \times 50 \times 1 \times 5}{1201988 \times 0.2679 \times 5} = 5.236\mu\text{g/L}$$

Compound	Laboratory (µg/L)	Validation (µg/L)	%D
Cis-1,2-Dichloroethene	5.0	5.0	0.0

#### 2.2 CDEOU4-20120823-PW07-0030 (6769224)

Vinyl Chloride

Sample Volume= 5ml

Volume purged=5ml

DF = 1

$$\text{Concentration } (\mu\text{g/L}) = \frac{115068 \times 50 \times 1 \times 5}{1140695 \times 0.2963 \times 5} = 17.022\mu\text{g/L}$$

Compound	Laboratory (µg/L)	Validation (µg/L)	%D
Vinyl Chloride	17.0	17.0	0.0

**Comments:**

1. Validation qualifiers (if required) were entered into the EDD for 2012-10-29-Powerwater MEDD-VOCs-Validated.